

SSU (Tony Baldwin)
Larry Jones (USDoE)

Electrolyser & RBL Maintenance

ARC2 (Nauru) - August 2001

1. The primary concern of this exercise was to undertake the four monthly maintenance action on the electrolyser and RBL at Nauru.
2. Secondary to the above, was to impart knowledge of the equipment to Troy Culkan and enable SSU (ARMS/TWP) located in Darwin to take on board the maintenance of this equipment.
3. Initial inspection of the equipment showed that it was operating satisfactorily, with the exception of the following :-C
the compressor start switch (ZSH6) operated intermittently - reported to the Bureau two days earlier.
C deionising water cartridge head leaking slightly and repaired by local personnel -reported 6 weeks previously.

Electrolyser Maintenance Action

4. The compressor reed switch assembly was replaced with a serviceable unit held on site.
5. The head of the deionising cartridge was replaced with a unit consigned from Australia. As a result of a change in colour of the demineralising cartridge resin, the deionising cartridge resin was changed and should provide another 18 months trouble free operation.
6. During the complete overhaul of the compressor, its valve plate was replaced with a unit forwarded from Australia. The removed plate was thoroughly overhauled and is now held on site as a replacement spare.
7. Both the inlet and outlet manometer exhaust tubes appeared to be blocked, these were removed and extensively cleaned.
8. 350ml of moisture was vented from the hydrogen storage cylinder, although not detrimental to the operation of the electrolyser, is highly undesirable (poor filtering of the gas probable cause).
9. The current potentiometer is faulty as requires replacing, no spares held on site.
10. All other tests and action as specified in the BoM maintenance schedule were undertaken without problems.

RBL Maintenance Action

11. Re-tensioning of all curtain tension cords was undertaken.
12. The hydrogen gas hose from the underground line to the filler table may require replacing in the not too distant future, no spares are held on site.
13. All other tests and action specified in the BoM maintenance schedule undertaken.

Outstanding Action from last Report

14. Transformer cables connecting to the diodes not replaced. **(Responsible Authority - BoM SSU Darwin)**
15. Water pump purchased not received in Nauru, still in HO Store awaiting despatch. **(Responsible Authority - SREM HO)**
16. The water supply to the site has not been addressed. Action is being taken by local personnel to have a tanker deliver water as needed - storage tank was at 2/3 rds capacity.

Further Action

17. Manufacture, despatch and install electrical cables from the transformer to the diodes at the

next available visit. **(Responsible Authority - BoM SSU Darwin)**

18. Arrange issue of potentiometers and hydrogen piping. **(Responsible Authority - SREM HO)**

19. Modification of establishment table and maintenance schedule to include additional items and arrange issue of those deficient. **(Responsible Authority - SREM HO)**

20. Forward copies of all relevant documentation to the SSU/ARMS site in Darwin and includes the following **(Responsible Authority - SREM HO) :-C**

Installation, Technical and Maintenance Manuals of the mechanical RBL.

C Excel files detailing site spares and maintenance schedule.

C Relevant BoM documentation not contained in the Electrolyser Handbook.

21. It is suggested (Troy agrees), that he participate in a “refresher” electrolyser course at the next available opportunity. Prior to joining the SSU/TWP unit in Darwin his experience with the electrolyser was limited due to this equipment in Darwin being the responsibility of other personnel.

Colin Maxfield

Engineering Services

05 September 2001.

information copies to :-Rex

Pearson SSU/TWP Darwin

Troy Culgan SSU/TWP Darwin